Capital Zone Emergency Services Council "CZESC"

Quarterly Report

Quarter 4 (October to December 2016)

With focus on the Emergency Departments of

Cobequid Community Health Centre

And

Hants Community Hospital

Introduction

Emergency Medicine is the medical specialty dedicated to the diagnosis and treatment of unforeseen illness and injury. It includes the initial evaluation, diagnosis, treatment, and disposition of any patient requiring expeditious medical, surgical, or psychiatric care <1>. Thus, the operationalization of "Integrated Networks of Emergency Care" is inherently interdisciplinary and interdependent upon multiple in-hospital and Health System wide structures and processes.

In alignment with the NSHA/IWK/EHSNS commitment to patient safety and with the Better Care Sooner standards (as well as with recommended national ED quality reporting guidelines) this quarterly report focuses on Key Process Indicators, and outcomes when available, to help drive the CQI imperative and to improve care to the patients and populations that we serve.

Emergency Medicine	**Unforeseen** **Unscheduled**	**Predictable** **Schedulable**
CTAS 1, 2, 3	• Often described as "real" emergencies 97% of fixed costs of ED to meet population burden of acute illness and injury<4> • Does include exacerbations of chronic problems	• "avoidable" CTAS 3 (ED as safety net) - frail elderly with no acute event or problem - partial diagnosis requiring further work up - chronic condition requiring follow up or has predictable clinical course
CTAS 4, 5	• ***DO NOT*** cause ED overcrowding<2,3> • Very low marginal cost to see in ED<4,5> • 9/10 most common successful lawsuits in EM	• "inappropriate" ED visits (ED as gate keeper) - Medication refill - "sick note" for work or school - Queue jumping to see specialist

1. ACEP definition of Emergency Medicine: http://www.acep.org/Content.aspx?id=29164
2. MYTH: Emergency room overcrowding is caused by non-urgent cases - October 2009 Canadian Health Research Foundation Myth Buster of the year series
3. The Effect of Low-Complexity Patients on Emergency Department Waiting Times Schull MJ, Kiss A, Szalai JP. Ann Emerg Med. 2007 Mar;49(3):257-64, 264.e1. Acad Emerg
4. **THE COSTS OF VISITS TO EMERGENCY DEPARTMENTS** ROBERT M. W ILLIAMS , M.D., .PhD (N Engl J Med 1996;334:642-6.)
5. Emergency Medical Care: 3 Myths Debunked, Huffington Post. Leigh Vinocur, M.D. Director of Strategic Initiatives at the University of Maryland School Medicine.

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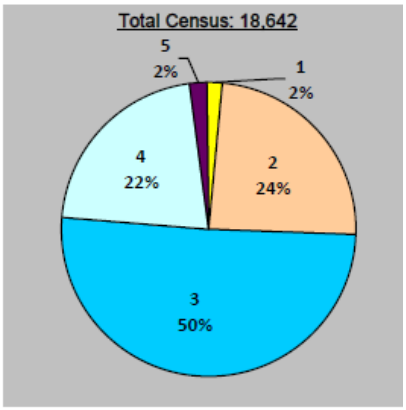
Demand

Census – Halifax Infirmary ED

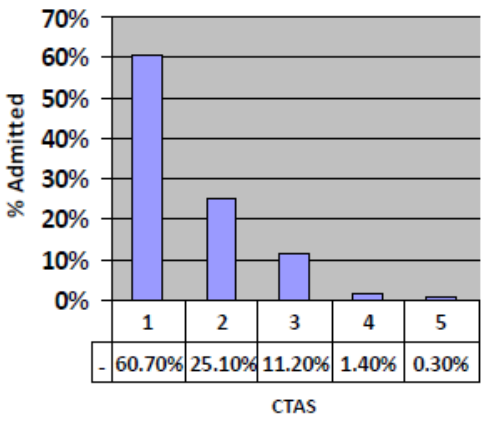
Reporting Date: October 1 – December 31, 2016

Context :

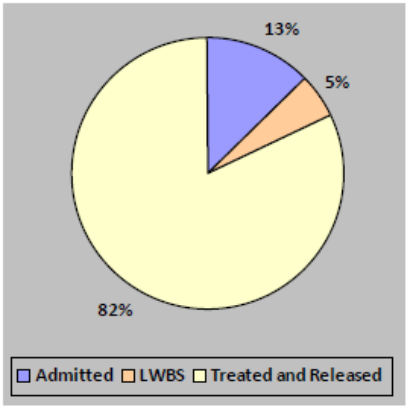
Emergency Departments are designed to meet the unscheduled (from life threatening to relatively minor) health care needs of the population. The 5 level CTAS score is used to differentiate acuity (1 being severe and time dependent) though it is only a surrogate marker for the complexity of care. Left Without Being Seen (LWBS) is a reflection of decreased access secondary to wait times (target 2-3%). Percentage admitted national benchmark is 16-18% for CTAS 3s.



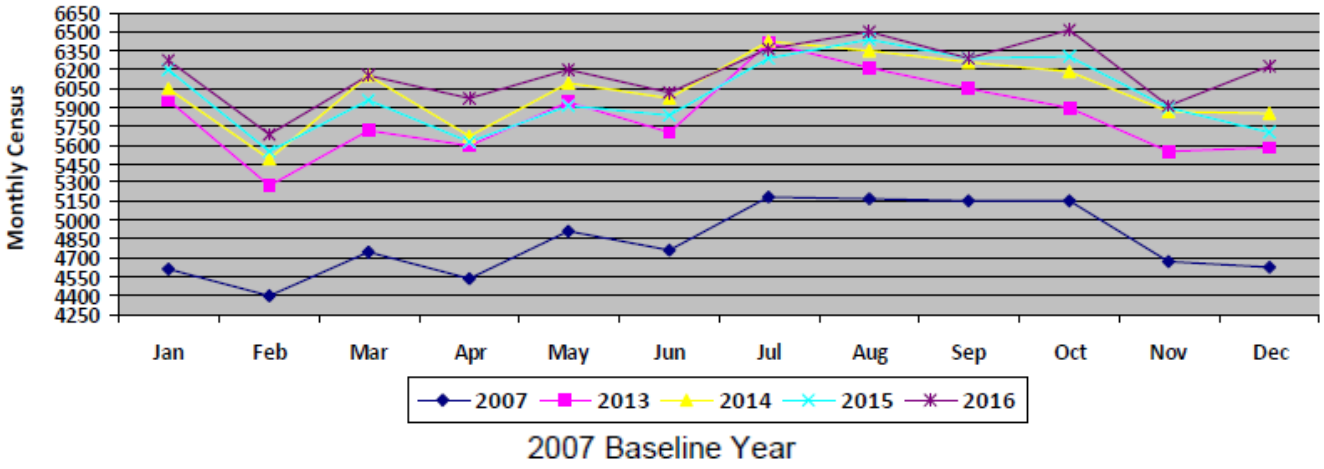
CTAS Distribution



Percentage Admits



Discharge Distribution



Analysis:

Monthly census continues at levels similar to that in the previous three years. Half of our patients are CTAS 3, and 4/5 patients are discharged from the ED. LWBS rates remain high at 5%, indicating ongoing access block.

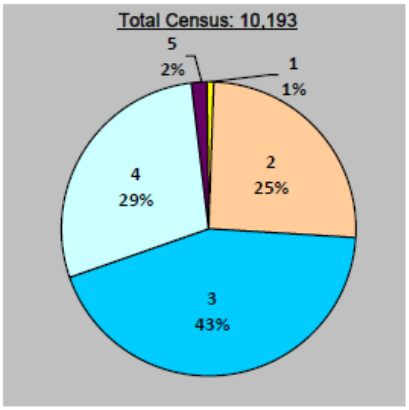
Sam Campbell, Site Chief, HI ED

Demand

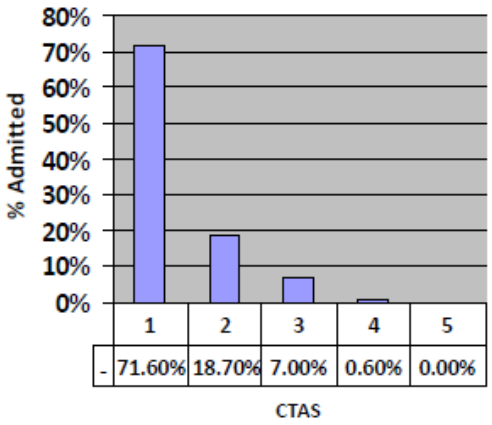
Census – Dartmouth General ED Reporting Date: October 1 to December 30, 2016

Context:

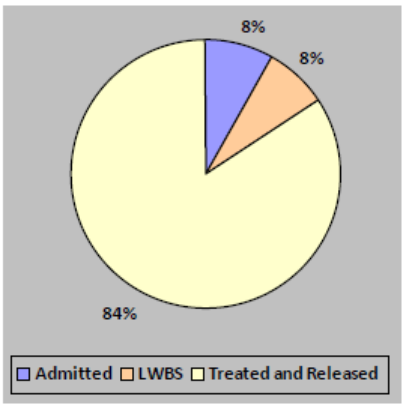
Emergency Departments are designed to meet the unscheduled (from life threatening to relatively minor) health care needs of the population. The 5 level CTAS score is used to differentiate acuity (1 being severe and time dependent) though it is only a surrogate marker for the complexity of care. Left Without Being Seen (LWBS) is a reflection of decreased access secondary to wait times (target 2-3%). Percentage admitted national benchmark is 16-18% for CTAS 3s.



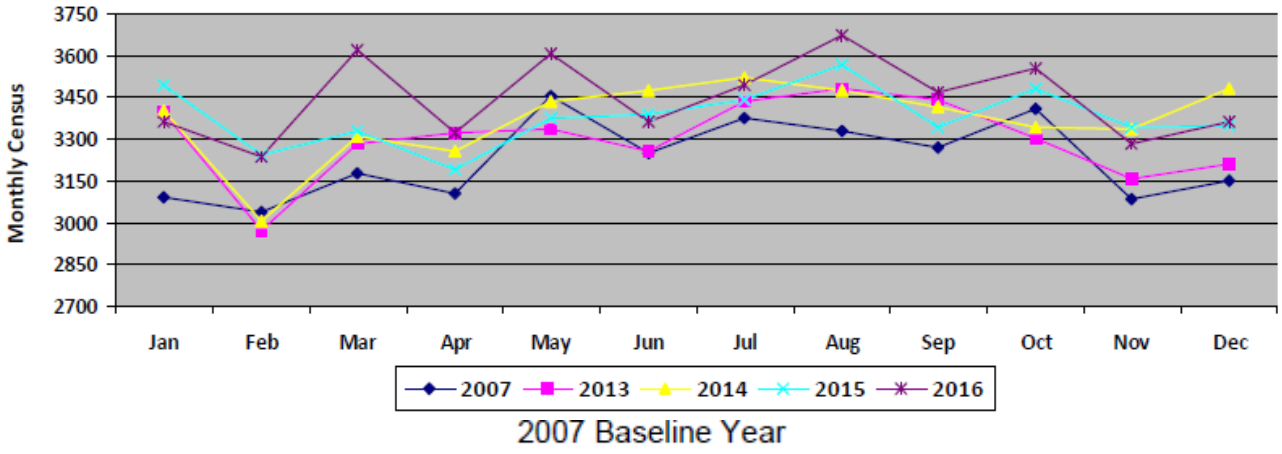
CTAS Distribution



Percentage Admitted



Discharge Distribution



Analysis:

Historically high acuity at the Dartmouth General Hospital Emergency Department persists and high patient volumes are continuous.

Ravi Parkash, Site Chief, DGH ED

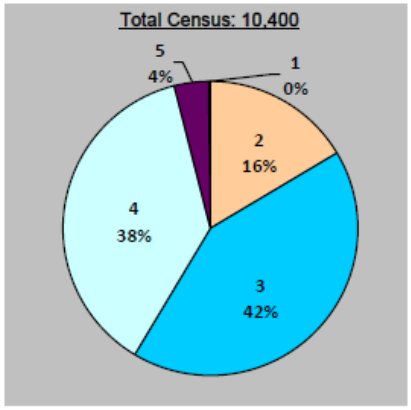
Demand

Census – Cobequid Community ED

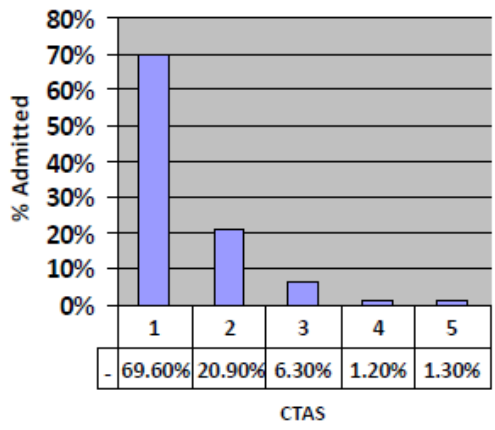
Reporting Date: October 1 to December 30, 2016

Context:

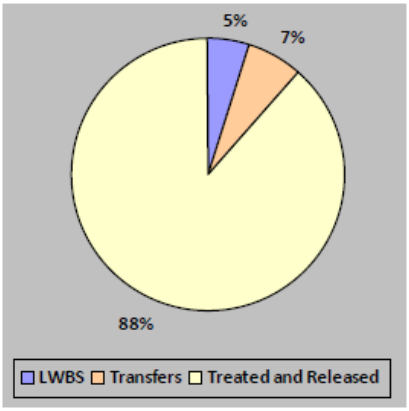
Emergency Departments are designed to meet the unscheduled (from life threatening to relatively minor) health care needs of the population. The 5 level CTAS score is used to differentiate acuity (1 being severe and time dependent) though it is only a surrogate marker for the complexity of care. Left Without Being Seen (LWBS) is a reflection of decreased access secondary to wait times (target 2-3%). Percentage transferred is used as a surrogate for admits for CCHC.



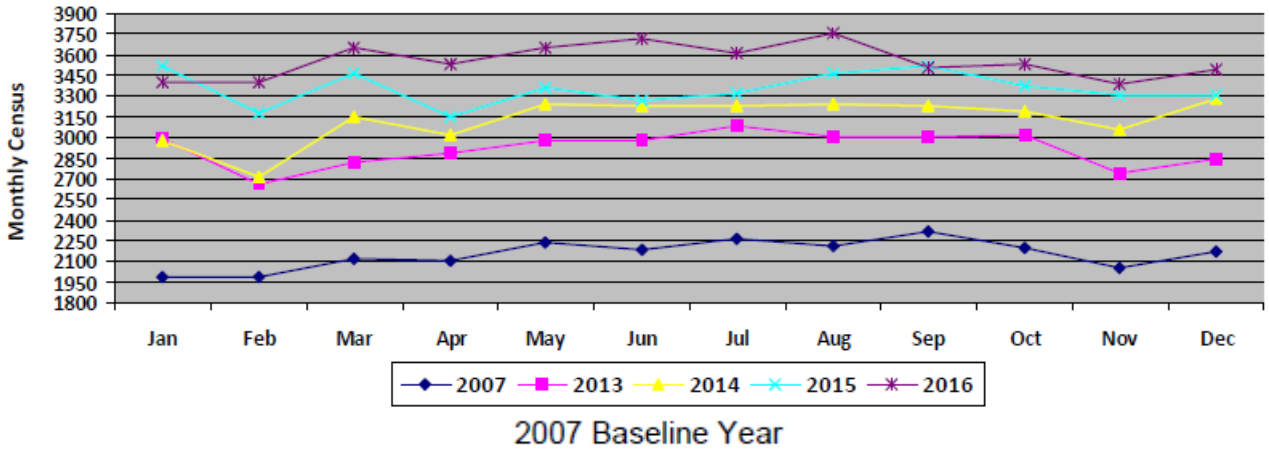
CTAS Distribution



Percentage Transferred



Discharge Distribution



2007 Baseline Year

Analysis:

Patient registrations continue to increase at CCHC. Fourth quarter registrations are 4% higher than the same period last year. LWBS rate was stable at 4.8%(4.5% for 2016). The increased volume often necessitates double triage, we are looking at revising nursing complement schedules to address this issue. The transfer rate remains stable at 7%.

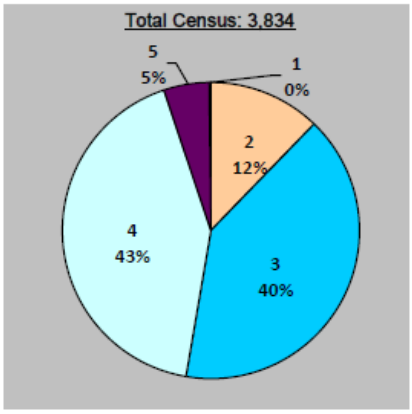
Mike Clory, Site Chief, CCHC ED.

Demand

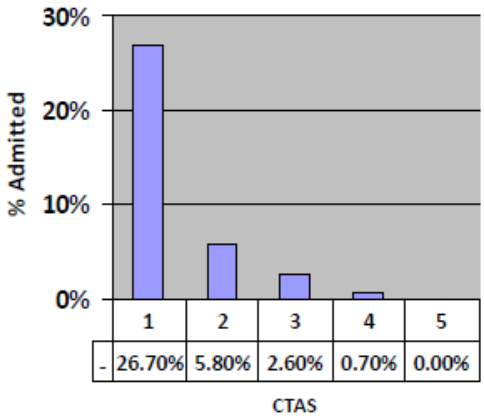
Census – Hants Community Hospital ED **Reporting Date: October 1 to December 30, 2016**

Context:

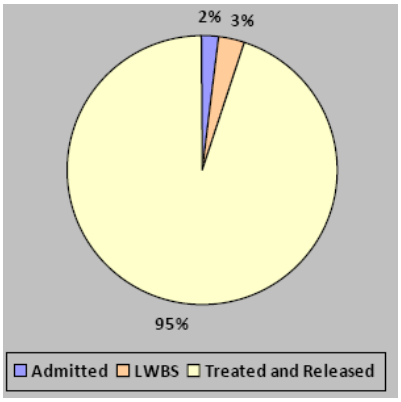
Emergency Departments are designed to meet the unscheduled (from life threatening to relatively minor) health care needs of the population. The 5 level CTAS score is used to differentiate acuity (1 being severe and time dependent) though it is only a surrogate marker for the complexity of care. Left Without Being Seen (LWBS) is a reflection of decreased access secondary to wait times (target 2-3%).



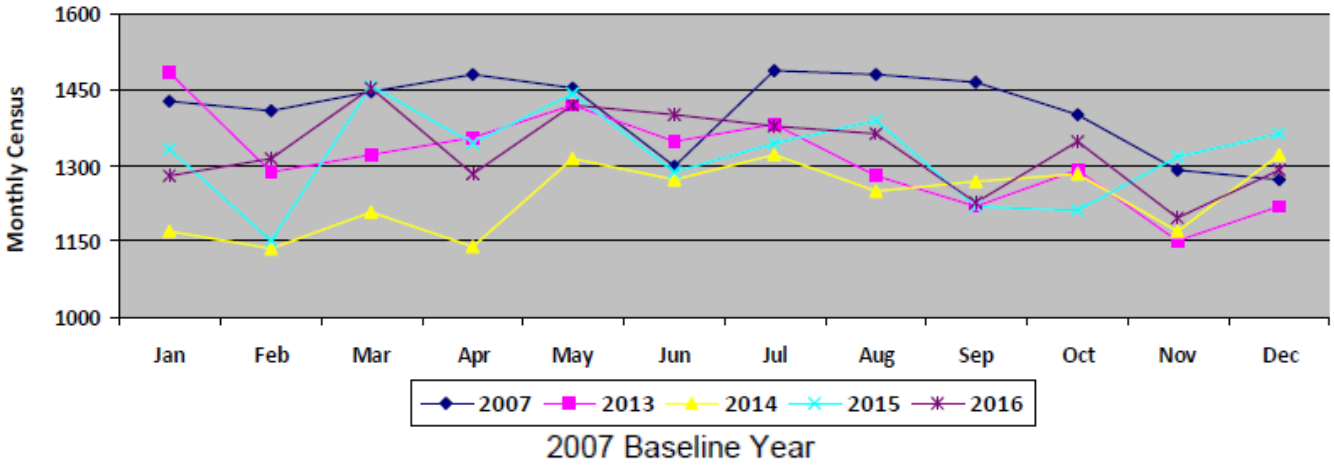
CTAS Distribution



Percentage Transferred



Discharge Distribution



Analysis:

Census levels are similar to previous years and percentages of CTAS levels remains stable

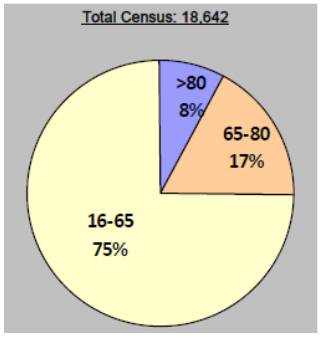
Sam Campbell, Site Chief, HCH ED

Demand

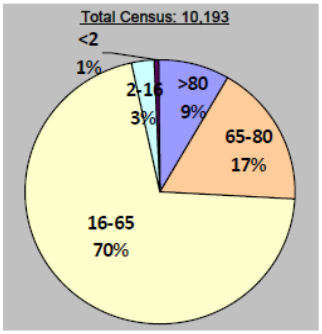
Emergency Department Demographics – Halifax Infirmary / Dartmouth General / Cobequid Community / Hants Community

Context:

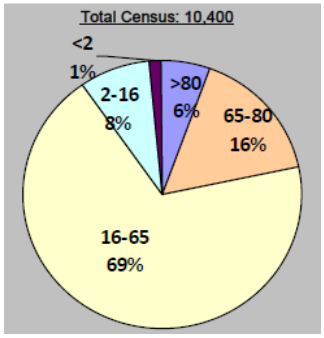
The complexity of patients presenting to the Emergency Department is a function of CTAS, age, presenting complaint, and many other factors. This data looks at the percentage of census in the following age groups (IWK excluded at this time): < 2 yrs, 2-16 yrs, 16-65 yrs, 65-80 yrs, and > 80 yrs.



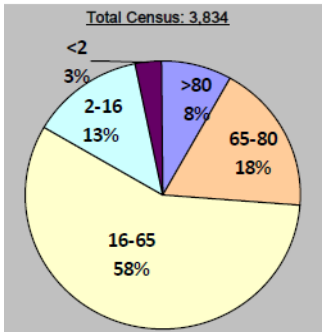
Halifax Infirmary
ED Distribution



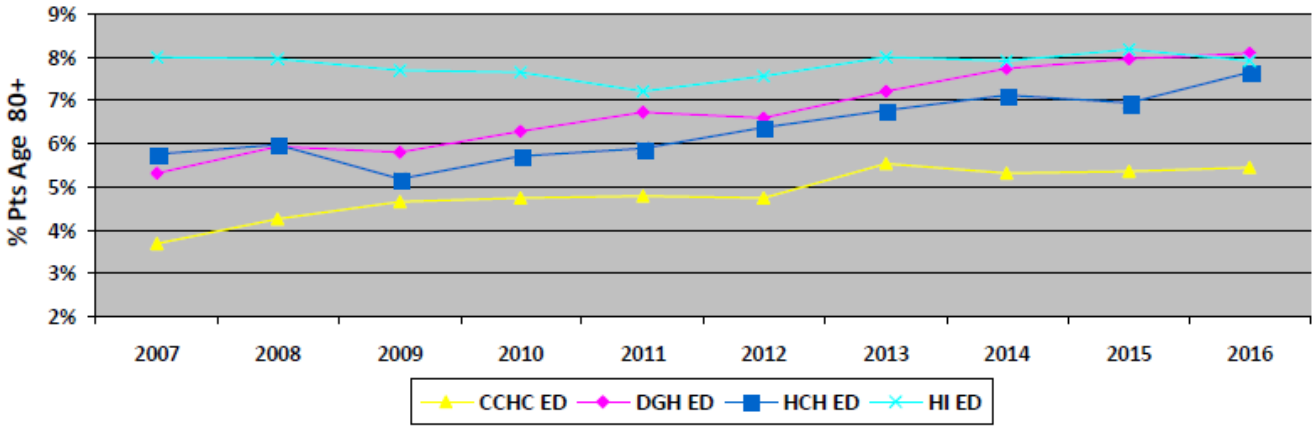
Dartmouth General
ED Distribution



Cobequid Community
ED Distribution



Hants Community
ED Distribution



Analysis:

While patient volumes continue to rise, so too does the average age of patients, this is a surrogate marker for complexity, which requires longer stays and higher resource use. Constantly improving the care we provide to older patients and those with frailty is a specific goal of the Central Zone Emergency Departments.

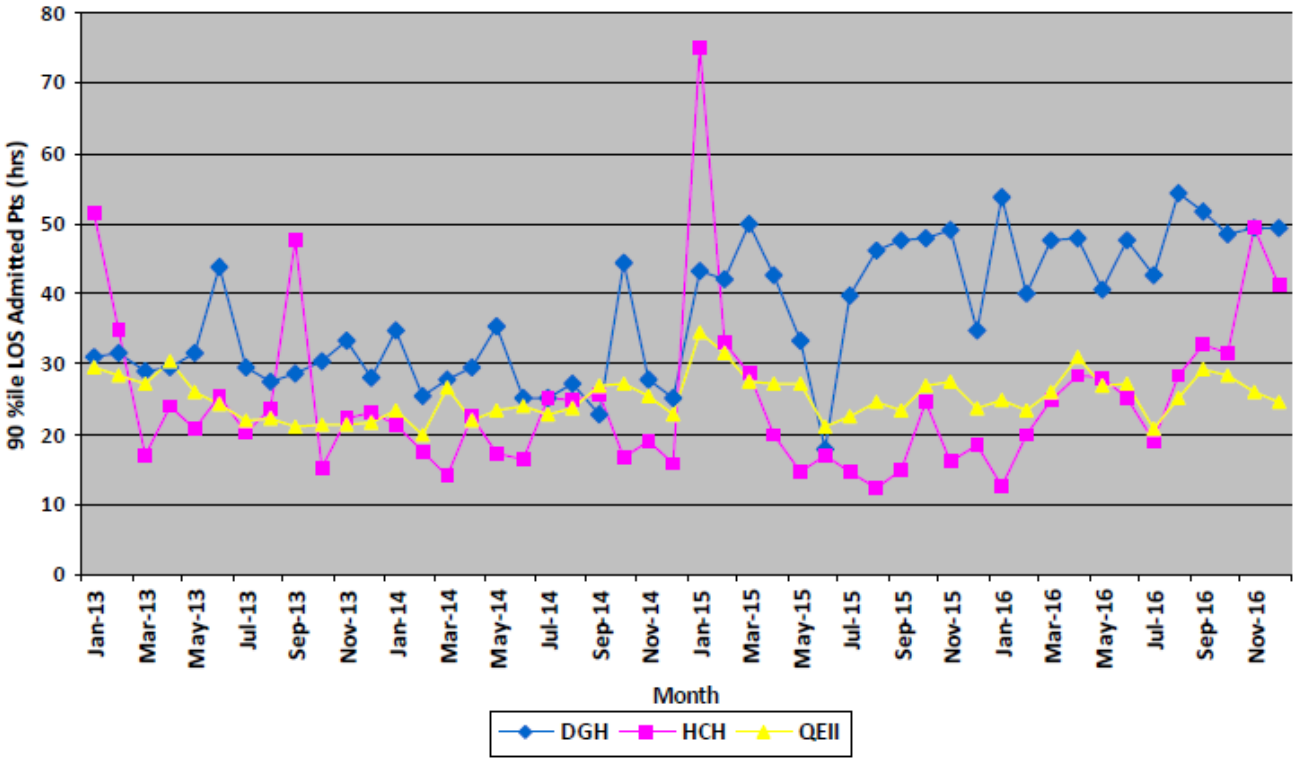
Sam Campbell, Acting CZESC Chair, NSHA

Flow and Network Integration

ED Length of Stay (LOS) for Admitted Patients

Context:

ED LOS of admitted patients (i.e. "ED boarding") has been recognized as the main cause of overcrowding in the ED. Overcrowding is the term used to describe access block. Access block as manifested by increased patient wait times, increased ambulance offload times, and increased LWBS rates is associated with increased adverse outcomes, increased mortality (in a dose/response relationship), and increased costs to the system overall.



Analysis:

The boarding of admitted patients in the Emergency Departments continues to present a significant challenge to flow in throughout the Zone. Dartmouth General Emergency is faring the worst in this aspect. The current national target recommended by CAEP is 12 hours, and until recently only Hants Emergency was able to meet this (and even then, only on occasion) This latest report shows Hants' boarding hours exceeding that at the QEII for the past 6 months. Although it is admirable to see Hants 'share the pain', it shows how the system dysfunction continues to expand outside of the urban sites. The boarding of inpatients leads to longer waits for emergency patients, increased consumption of resources from the Emergency Department budget to pay for the care of inpatients and staff stress and burnout. Recent deaths after long offload delays are continuing to cause great morale problems (not to mention the effects on patients and their families).

Sam Campbell, Acting CZESC Chair, NSHA.

Flow and Network Integration

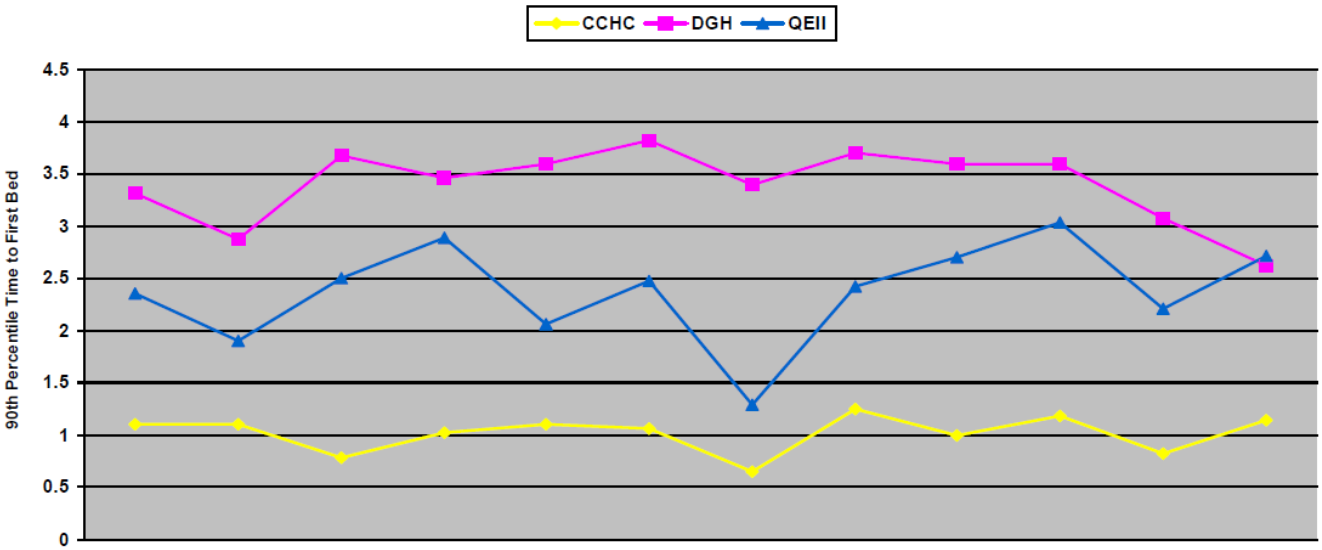
Ambulance Offload / Transition

Context:

Ambulance offload times are another Key Process Indicator which has implications both to the individual patient (i.e. wait times to see an MD), and to the community (i.e. turn around times for the ambulance to get back to the streets and available to the community for the next 911 emergency call.

Because of rising ambulance offload times in the past (due to ED access block) a transition team has been in place to assume the observation of care in the "ambulance hallway" prior to the placement of the patient in an ED bed (to allow the EHSNS crew to return to service). This off load team was discontinued on April 1, 2014.

Reporting Period from: Jan 01, 2016 to: Dec 31, 2016



	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
CCHC	1.1	1.11	0.79	1.03	1.1	1.07	0.65	1.25	1	1.18	0.82	1.15
DGH	3.32	2.88	3.67	3.46	3.6	3.82	3.4	3.7	3.6	3.6	3.08	2.62
QEII	2.35	1.91	2.5	2.89	2.07	2.48	1.29	2.42	2.7	3.03	2.21	2.71

90th Percentile Time to Bed (hr)

CCHC	301	248	270	254	239	310	234	276	244	262	280	297
DGH	529	525	594	519	632	598	623	680	580	647	555	695
QEII	1467	1298	1300	1253	1379	1386	1408	1414	1334	1433	1334	1509

Ambulance Volume

Analysis:

Offload times are over 2.5 hours 90% offload times at both large sites.

Sam Campbell, Acting CZESC Chair, NSHA.

Flow and Network Integration

Matching Capacity with Demand:

Context:

Ambulance smoothing has occurred in the central region for Quarter 4 2012 based on the relative surge capacity at each ED site. This table shows the percentage of time that the HI and DGH were on then escalating levels of capacity (Red being the highest surge level). CCHC is also part of this network. The surge levels are determined by 5 criteria and are measured real time so the status changes dynamically. If an ambulance patient does not meet exclusion criteria (CTAS 1 and 2 previously determined trip destination criteria for major trauma, stroke, STEMI, or have had recent admit to hospital) then patients may be rerouted from a Red ED to a Green ED.

QEII	DGH	%
GREEN	GREEN	13.43%
YELLOW	RED	12.88%
YELLOW	GREEN	11.28%
GREEN	RED	11.05%
YELLOW	YELLOW	9.80%
GREEN	YELLOW	8.59%
ORANGE	RED	5.64%
YELLOW	ORANGE	5.24%
RED	RED	4.33%
ORANGE	YELLOW	4.08%
GREEN	ORANGE	3.70%
ORANGE	GREEN	3.25%
ORANGE	ORANGE	2.45%
RED	YELLOW	1.62%
RED	GREEN	1.53%
RED	ORANGE	1.14%

Analysis:

Destination redirection from DGH toward the QEII continues to be significantly worse than the other way around (23.93% vs . 3.15%)

Cobequid Community Health Centre continues to help smooth EHS offloads by taking a higher proportion of ambulances with CTAS 3, 4 or 5 patients when other sites are in 'Red' up until 15:00

Sam Campbell, Acting CZESC Chair, NSHA

Flow and Network Integration

Pod of Initial Destination at the Halifax Infirmary ED / RAU

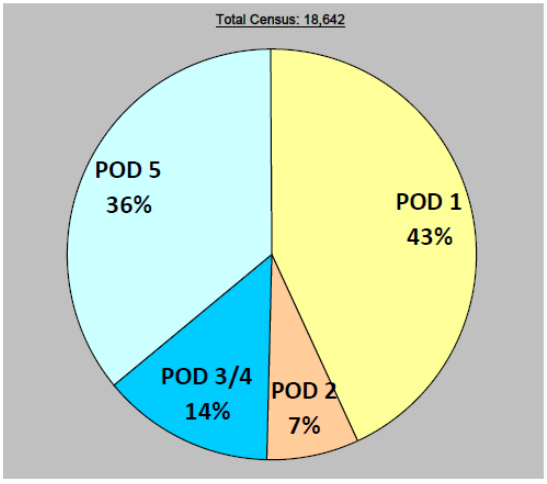
Context:

Internal flow within an ED needs to optimize available space/capacity to meet the volume/CTAS demands of the presenting patients**.**

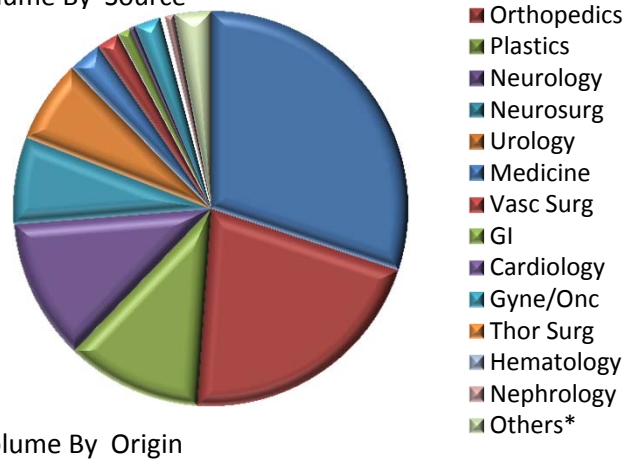
The HI ED has innovated (chair centric Pod 1, fast track/paramedic assisted pod 5) to meet the needs of this demand. The Rapid Assessment Unit (RAU) is another aspect of the ED which has evolved to meet the needs of transferred patients and referred patients from our own ED. This allows expedited consultations to specific services and frees up bed time to see the next Emergency patient in the waiting room or ambulance hallway.

HI ED- POD Utilization

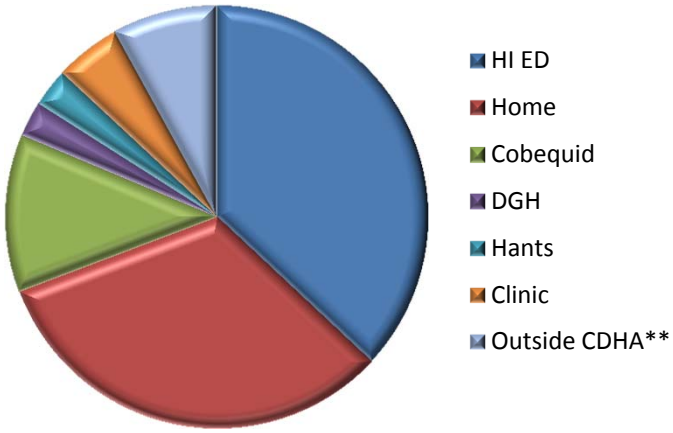
- Initial Location POD 1-2-3-4-5 or Psych
- Psych and Intake A part of Pod 1
- Intake B Part of Pod 5
- No Left Without Being Seen Counted



Volume By Source



Volume By Origin



Analysis:

'Chair-centric' pods 1 and 5 continue to serve 80% of patients, while only offering 40% of our bed capacity. This illustrates the pressure resulting from a restricted ability to empty beds after their emergency phase has been completed – in the vast majority of cases, this is due to admitted patients remaining the Emergency Department.

RAU continues to divert patients from Emergency Department beds. Almost half of all RAU patients are referred to orthopedics or general surgery. Although designed primarily to divert consulted patients originating at other hospitals, 35% of patients come from the Halifax Infirmary Emergency Department and 33% of patients coming from home. The concern with this latter group is, they may represent the use of the RAU as a 'clinic' by consultant services.

Sam Campbell, Site Chief, QEII ED

Flow and Network Integration

Clinical Decision Unit (CDU) Utilization

Context:

The Clinical Decision Unit is a virtual unit embedded within the physical space of the ED which facilitates observation and rechecks by the Emergency Physician. The purpose is twofold; to improve the transfer of care with more explicit ordering and documentation clinical care pathways, and to try and reduce admissions for patients that potentially may "turn around" with 6 – 24 hours of treatment and observation.

Site	CDU patients	CDU Patients Admitted	Percentage CDU Admitted	Total Site Patient Volume	Percentage Total Patients CDU	Median Length of Stay CDU Non Admitted patients (hr)
HI ED	304	40	13.2%	18642	1.6%	18.68
DGH ED	344	96	27.9%	10193	3.4%	19.22
CCHC ED	69	45	65.2%	10400	0.7%	8.45

Analysis:

While the Dartmouth General Emergency Department approaches the 4-5% benchmark for Clinical Decision Unit (Ontario), The Halifax Infirmary Emergency Department and Cobequid Community Health Centre continue to underuse (or under-document) this option.

Sam Campbell, Acting CZESC Chair, NSHA.

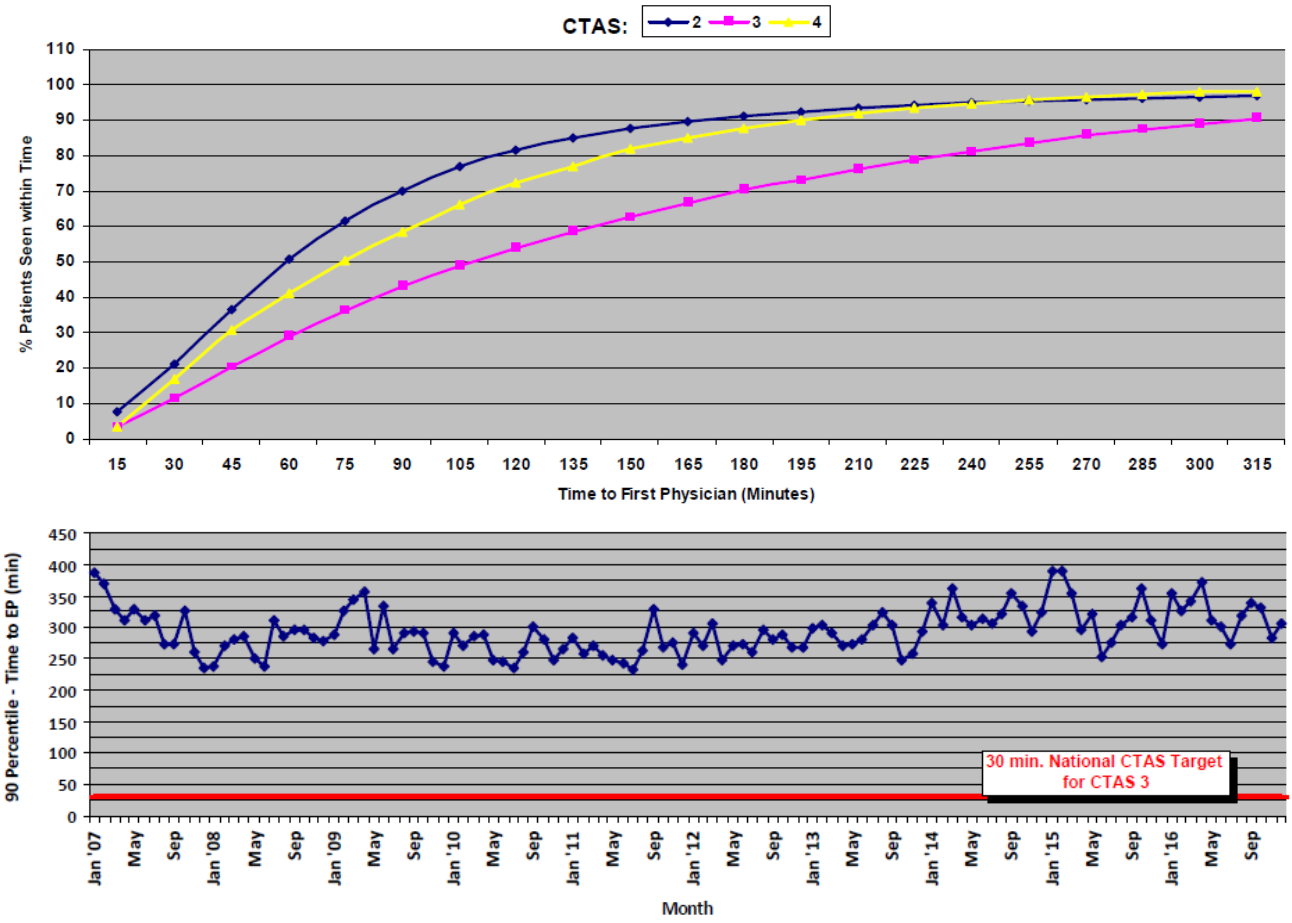
Patient Experience

Wait Times – HI ED

Context: One of the main ways ED access block manifests itself is in patient wait times (time from registration to time to see MD). Wait times have been shown to be associated with adverse outcomes in a dose response curve that suggests causation.

This data looks at the wait time performance curve for CTAS 2, 3, and 4s (assuming CTAS 1s get seen expeditiously and CTAS 5s have less of a time dependency).

The time targets are: CTAS 2 = 15 min, CTAS 3 = 30 min, CTAS 4 = 60 min.



Analysis:

Waits for emergency care remain unacceptably long, with CTAS 3 patients bearing the brunt of system dysfunction. Over half of CTAS 3 patients wait for over two hours and 20% are still waiting over 4 hours for care. (CTAS 4 patients are paradoxically seen quicker than those with CTAS 3 because of the parallel streaming process that takes many of them through pod 5). As half of our patients are assigned a CTAS score of 3, this reflects poorly on the ability of the system to provide emergency care within a reasonable time period. Considering that the occupation of Emergency Department beds by admitted patients remains high, it appears that without increased inpatient capacity, 'internal' methods to improve flow are likely to have limited further impact.

Sam Campbell, Site Chief, HI ED

Patient Experience

Wait Times – DGH ED

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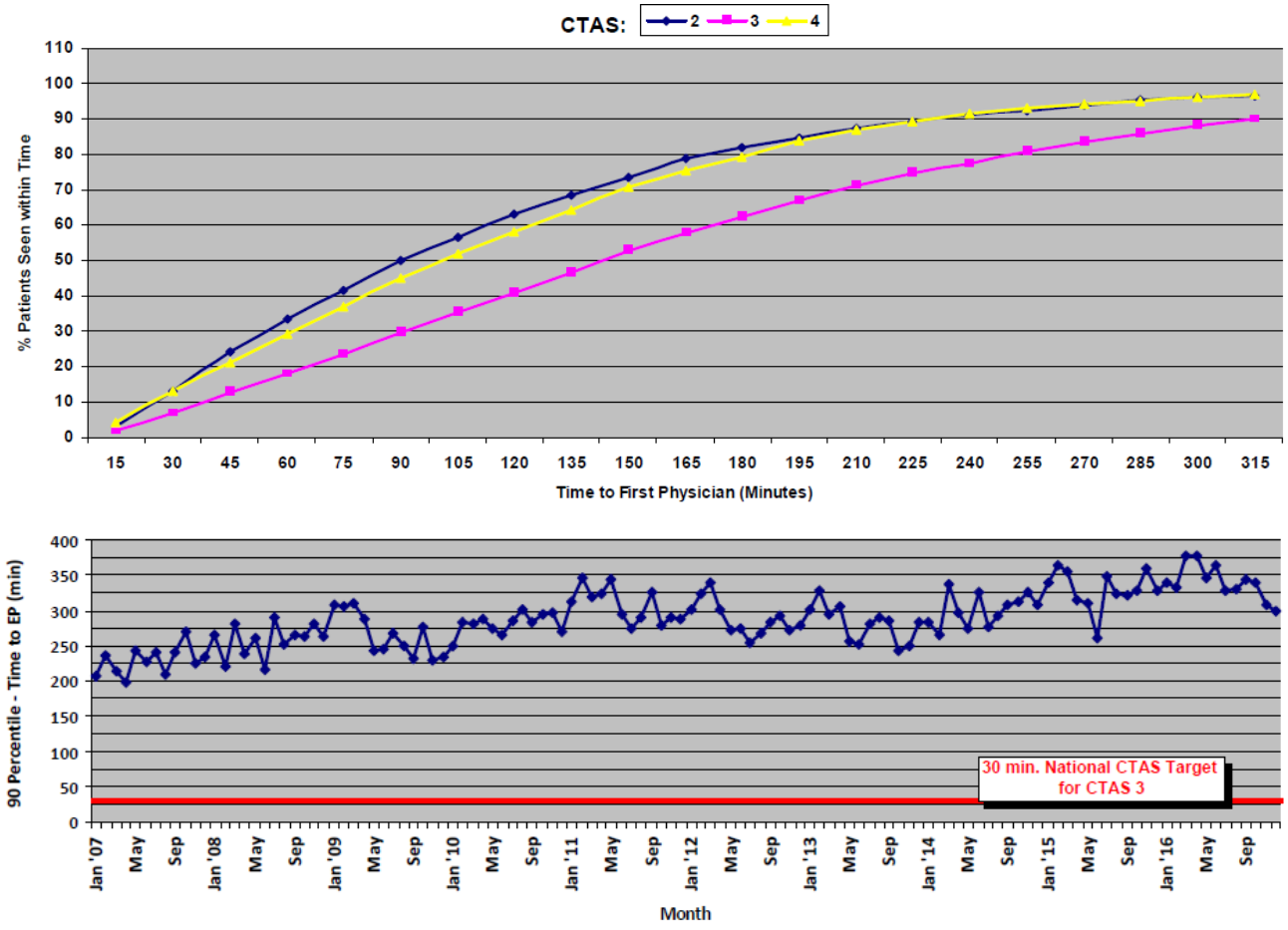

Analysis:

Increasing wait times at the Dartmouth General Hospital Emergency Department reflect lack of inpatient capacity at Dartmouth General Hospital and increased length of stay for admitted patients in the emergency department . This creates access block for incoming patients.

Ravi Parkash, Site Chief, DGH ED

Patient Experience

Wait Times – Cobequid ED

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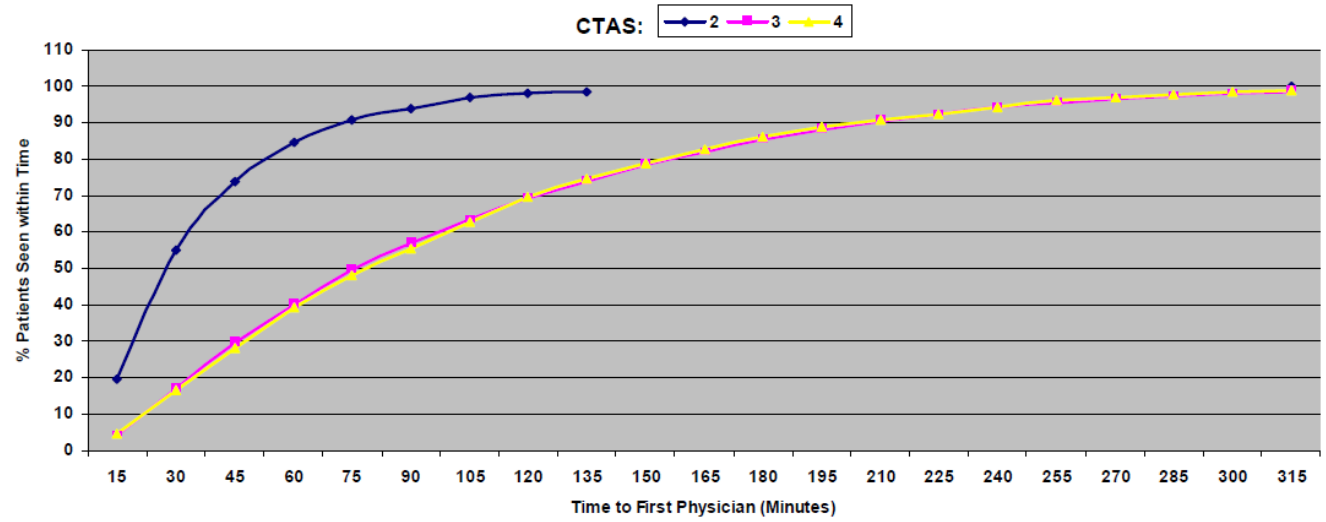
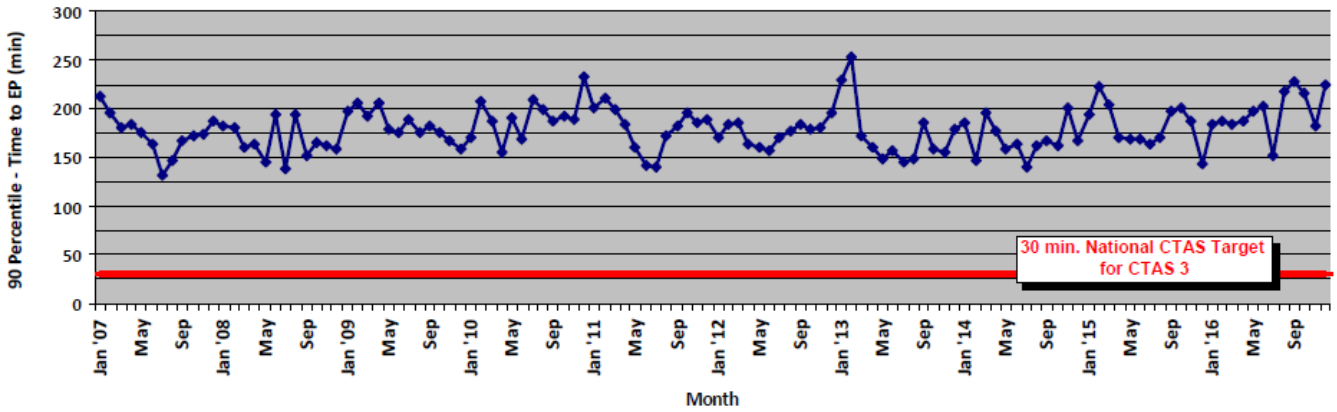
The time targets are: CTAS 2 = 15 min, CTAS 3 = 30 min, CTAS 4 = 60 min.





Analysis:

Wait times have increased slightly due to increased volumes. An increase in nursing resource to allow full bed capacity during hours of operation may improve patient wait times as the level 3 patients are often waiting for a bed to be assessed.

Mike Clory, Site Chief, CCHC ED

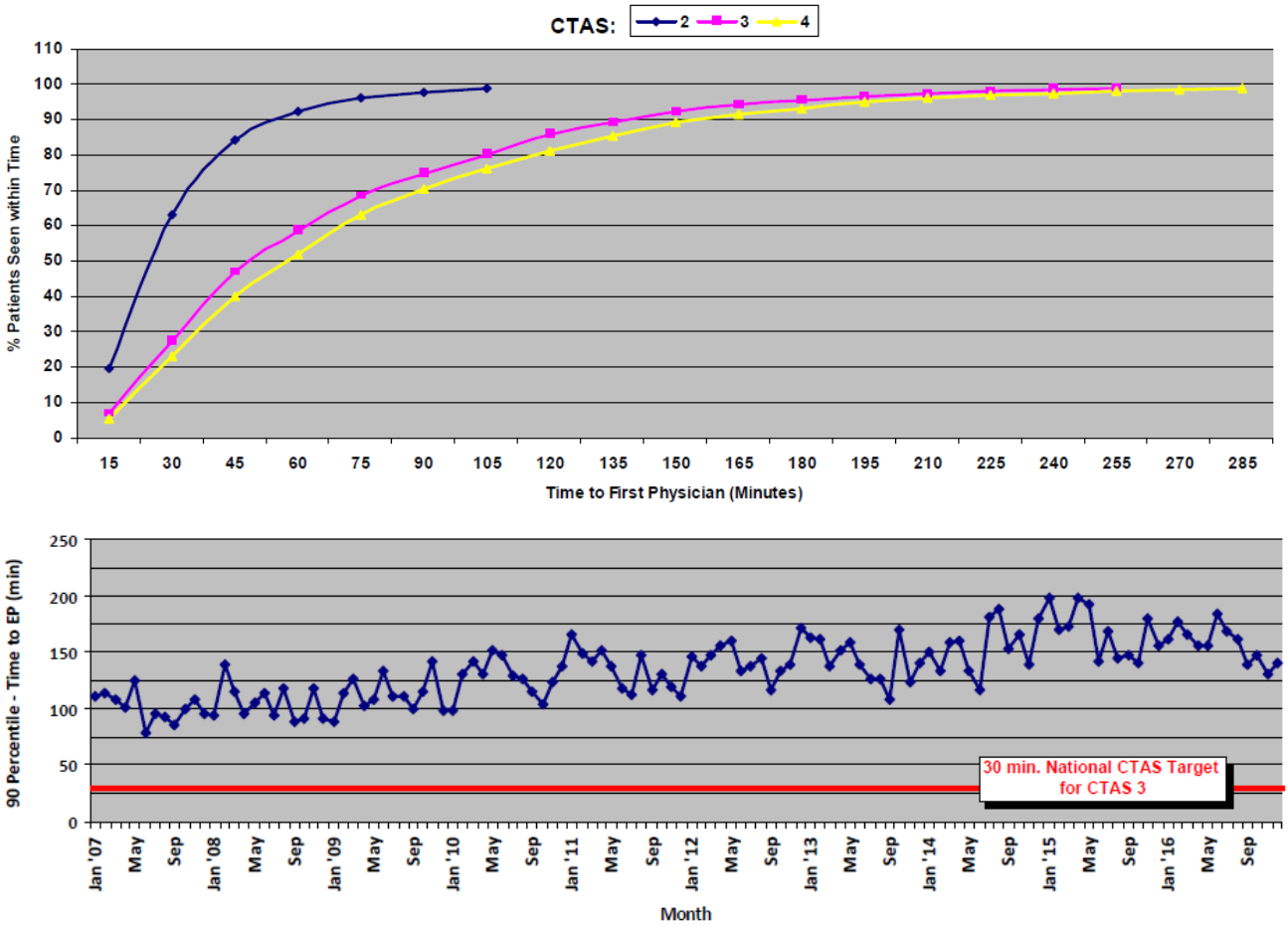
Patient Experience

Wait Times – Hants ED

Context: One of the main ways ED access block manifests itself is in patient wait times (time from registration to time to see MD). Wait times have been shown to be associated with adverse outcomes in a dose response curve that suggests causation.

This data looks at the wait time performance curve for CTAS 2, 3, and 4s (assuming CTAS 1s get seen expeditiously and CTAS 5s have less of a time dependency).

The time targets are: CTAS 2 = 15 min, CTAS 3 = 30 min, CTAS 4 = 60 min.



Analysis:

Over 80% of CTAS 3 patients are seen within 2 hours. Although not meeting the 30 minutes prescribed by CTAS, this remains better than the other sites with EDIS.

Sam Campbell Chief, Site Chief, HCH ED

Clinical Care

Diagnostic Imaging & Lab Reporting

Context:

Through put of patients in the Emergency Department is impacted by the intensity of the work up (lab and diagnostic imaging required). Decision rules developed in the Emergency Department setting (Cat Scan Head, Cervical-Spine, Ottawa Ankle, Rule Out Deep Vein Thrombosis, Rule Out Pulmonary Emboli, etc) all impact the cost effectiveness of patient investigation.

Reporting Period from: Oct 01, 2016 to: Dec 31, 2016

DI Ordered						
Site	Pt Volume	CT Orders (%Pt Volume)	US Orders (%Pt Volume)	MRI Orders (% Pt Volume)	XR Orders (%Pt Volume)	Total Di Orders (% Pt Volume)
QEII	18642	2391 (12.8%)	901 (4.8%)	39 (0.2%)	7405 (39.7%)	10736 (57.6%)
DGH	10193	1761 (17.3%)	680 (6.7%)	1 (0.0%)	4948 (48.5%)	7390 (72.5%)
HCH	3834	2 (0.1%)	78 (2.0%)	0 (0.0%)	1154 (30.1%)	1234 (32.2%)
CCHC	10400	1054 (10.1%)	155 (1.5%)	0 (0.0%)	5017 (48.2%)	6226 (59.9%)
Total	43069	5208 (12.1%)	1814 (4.2%)	40 (0.1%)	18524 (43.0%)	25586 (59.4%)

Labs Ordered			
Site	Patients with Labs Ordered	% Patients with Labs	Patient Volume
QEII	9286	49.8%	18642
DGH	5668	55.6%	10193
HCH	1322	34.5%	3834
CCHC	4592	44.2%	10400
Total	20868	48.45%	43069

Analysis:

Dartmouth General Hospital Emergency Department continues to order more Lab and Diagnostic Imaging than the other centres .

The reasons for this disparity in unadjusted data are unclear, but may lie in the different triage processes at each site. A new CZESC Registered Nurse blood testing guide has been developed that may decrease the disparity with lab test usage.

Sam Campbell, Acting CZESC Chair, NSHA.

Cobequid Emergency Department – Quality Initiatives

Triage Renovation – The renovation of the triage space and waiting room to provide for a double triage area is in progress. This project is supported with funding from the Cobequid foundation and hopefully will be completed in the next several months.

Prescribing Narcotics Policy – This was developed to address an increasing number of patients without a primary care physician requesting renewal of narcotic and other controlled substances. The goal is to provide a consistent approach to this patient adhering to prevailing guidelines from the CPSNS and the College of Family Physicians of Canada.